

FREEMAN, ERNEST R. (CONTINUED)

PUBLICATIONS (CONTINUED)

"IDENTIFICATION OF INFORMATION AND ASSOCIATED ANALYTICAL TECHNIQUES FOR THE SOLUTION OF FREQUENCY MANAGEMENT PROBLEMS," (4 Vols.) prepared for the Office of Telecommunications Policy under Contract DEP-SE-70-101.

"THE ANALYSIS/MEASUREMENT INTERFACE AND ECONOMIC CONSIDERATIONS," IEEE International Symposium, 1973.

"AN EVALUATION OF THE SELF-CHECK PROGRAM FOR THE AN/USM-335," Naval Air Test Center, February 1973.

"THE ROLE OF ECCM IN FRIENDLY ENVIRONMENT EMC," E. R. Freeman, Electro '76, May 1976. (Best Session Speaker Award).

"A STUDY OF DIGITAL USES AND STANDARDS FOR LAND MOBILE CHANNELS," for FCC, December 1976.

IEMCAP IMPLEMENTATION STUDY," Vols, I and II, RADC-TR-77-376, Rome Air Development Center, December 1977.

"THE IMPLEMENTATION OF INTRA-SYSTEM COMPATIBILITY ANALYSIS PROGRAMS," First ESTEC Spacecraft EMC Seminar, Noordwijk, Netherlands, May 1978.

"CAD TECHNIQUES FOR INTRASYSTEM EMC AT THE EQUIPMENT LEVEL," SPACECAD '79, Bologna, Italy, ESA SP-146, September 1979.

"ELECTROMAGNETIC COMPATIBILITY DESIGN GUIDE," Artech House, Boston, MA, 190 pgs., November 1981.

"INTERFERENCE SUPPRESSION TECHNIQUES FOR MICROWAVE ANTENNAS AND TRANSMITTERS," Artech House, Boston, MA, 350 pgs., January 1982.

"TV'S AURAL BASEBAND: ANOTHER CHANNEL FOR PAGING," Telocator, January 1984.

"ATTORNEY'S GUIDE TO ENGINEERING", Contributing Author, Matthew Bender, Inc., N.Y., 1986.

"EFFECTS OF NEW NARROW BAND TECHNOLOGIES IN AN URBAN ENVIRONMENT," URSI Meeting, Tel-Aviv University, May 1989.

Mirza Ahmad
Senior Engineer, Telecommunications Department

Summary:

Mr. Ahmad is experienced in radio telecommunications providing engineering, design, recommendations and evaluations in development of commercial, land mobile, microwave and digital radio systems as well as systems used by State, County and City emergency and non-emergency entities. More specifically, his experience includes; systems design involving state-of-the-art technology; cellular systems design; microwave analysis; radio; propagation studies; FCC licensing; equipment specifications; bid evaluations and recommendations. Further telecommunication experience includes; frequency analysis and planning; radio common carrier public safety trunking and SMR design and licensing; computer software development for propagation calculations. Among his experience, past work includes Alexandria, VA; and the Counties of Rockland, NY, Prince George's, MD; and City of Washington, DC. Mr. Ahmad has authored/co-authored numerous, unpublished SFA and client confidential reports and documents.

Education: B.S. Electrical Engineering, West Virginia, University Morgantown, West Virginia, December 1980
Completed Advanced Level Course Work in Antennas, Electromagnetics, Radar & Microwaves at West Virginia University 1981-1982
Credits in Computer Architecture and Computer Networks at George Mason University, Fairfax, Virginia 1988-1989.

Computer Hardware: IBM PC, VAX 11/730

Computer Software: MS-DOS, BASIC, FORTRAN, Lotus 123, WordPerfect, Harvard Project Manager, Framework II, Auto Cad, NTIA Telecommunications Software

Affiliations: Institute of Electrical and Electronics Engineers (IEEE)
IEEE Vehicular Technology Society
IEEE Antennas & Propagation Society
Armed Forces Communications and Electronics Association

Professional Experience:

1986 - Present: Senior Engineer, SFA, Inc., Landover, MD. Mr. Ahmad currently designs, engineers, evaluates and recommends systems in commercial and Land Mobile Radio communications for Cellular, Public Safety and Public Services for State, and Local government. Tasks include; VHF, UHF and 800 MHz trunked and conventional systems designs; Computer Aided Dispatch (CAD) designs; microwave network designs; communications traffic studies; frequency analysis and site designs; propagation calculations and system layout designs; writing system design reports; writing equipment specifications; evaluating bids; writing proposals.

Professional Experience Continued:

Mr. Ahmad designs and engineers communication systems for Cellular Radio Telephone, Paging & Two-Way Radio, Low Power TV, Wireless Cable, and Radio Common Carrier Telecommunications Systems. This includes UHF/VHF propagation analysis and calculations, coverage evaluation, frequency planning, interference analysis, equipment selection and evaluation and computer aided propagation design and calculations.

1982 - 1986: Consulting Engineer, Surrey & Morse, Washington, DC. Mr. Ahmad was involved in a broad range of disciplines for radio communication systems. His emphasis has been in the areas of high frequency radio-telephone such as cellular and specialized mobile radio (SMR), paging systems and microwave radio links, including digital termination systems (DTS), digital electronic message service (DEMS) and multiple distribution service (MDS), all parts of wide-band microwave services. Mr. Ahmad provided engineering support for systems design. including defining the technical parameters, selecting hardware, budgeting the system, conducting signal propagation analysis, interference analysis and site/terrain feasibility studies. His work required extensive contact with FCC personnel, equipment vendors and numerous other parties involved in the project.

Presentations:

MAS, MODERN TWO-WAY DATA, Communications Licensing Conference, Hosted by Rural Cellular Magazine, Washington, DC, Invited Speaker, October 1991.

Publications:

TO TRUNK OR NOT TO TRUNK, APCO Bulletin, September 1990.

RADIO COVERAGE DESIGN AND SYSTEM OPTIMIZATION, Mobile Radio Technology, February 1992.

J. Robert Bounds

Engineer V

Summary:

Mr. Bounds has more than 30 years of experience in antenna design, communication hardware development, and RF systems engineering. He has performed propagation and link analyses and he has specified antenna, transmitter, and receiver performance parameters. His background has included project engineering, functional management, program management, and proposal preparation responsibilities. Mr. Bounds' recent accomplishments include:

- Analyzing HF/VHF/UHF communications links for a classified electronic warfare study.
 - Serving as project engineer/program manager for a \$4.8M system integration program for a signal analysis system.
 - Preparing RF performance specifications for a high-dynamic range RF downconverter study proposal.
 - Selecting antennas, transmitters, receivers, and a frequency plan for a remote geophysical sensing system telemetry link.
 - Managing a high-dynamic range RF downconverter-A/D converter development program for a DoD Agency.
 - Directing the development of new HF communication products, including the SCANCALL 100 transceiver, an automatic antenna coupler, a mobile 100-watt transceiver, and a low-cost aircraft transceiver.
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Education: M.S., *Engineering Administration*, George Washington University, Washington, DC, 1980

B.S., *Electrical Engineering*, University of Virginia, Charlottesville, VA, 1960

Affiliations: Armed Forces Communications and Electronics Association
Institute of Electrical and Electronics Engineers
Institute of Navigation
Navigation Foundation

Clearance: TOP SECRET/SI (pending)

Experience:

May 1992 to Present: *Senior Electrical Engineer*, SFA Inc., Landover, MD. Mr. Bounds provides high-level technical oversight on engineering programs at SFA's Lexington Park office. He is responsible for business development and proposal preparation, and he will function as a program manager on various efforts as required. Mr. Bounds is responsible for business development at the Naval Air Warfare Center - Aircraft Division, the Naval Electronic Systems Engineering Activity, and other government agencies.

1991 to May 1992: *Director of Programs*, Metratek, Inc., Falls Church, VA. Mr. Bounds directed all microwave and radar programs.

1990 to 1991: *Program Director, Fairchild Defense, Germantown, MD.* Mr. Bounds was responsible for the Modem Test Set production program. He also coordinated numerous proposal efforts.

1984 to 1990: *Program Director, Martin Marietta Ocean Systems Operations (formerly Gould Inc.), Glen Burnie, MD.* Mr. Bounds was responsible for signals intelligence (SIGINT) hardware development, RF systems engineering, systems integration, and logistic support programs. He served as a client liaison and was responsible for the staffing, budgeting, scheduling and management of all programs; the preparation of status and financial reports and reviews; and the management of the marine navigation business area. He developed and implemented marketing strategies and plans and was directly involved in proposal efforts.

1982 to 1983: *Member of the Technical Staff, ElectroSpace Systems, Inc., Arlington, VA.* Mr. Bounds provided engineering assistance to the NAVELEX program manager for the Navy's fixed VLF transmitting stations.

1980 to 1982: *Vice President, Director of Engineering, Sunair Electronics, Inc., Fort Lauderdale, FL.* Mr. Bounds was responsible for the operation of the Engineering Department—including product engineering, systems engineering, and engineering support. He was involved in the development of new HF communications products and he performed engineering activities that supported marketing and manufacturing efforts.

1977 to 1980: *Chief, Special Projects Division, Voice of America, USICA, Washington, DC.* Mr. Bounds directed all major construction and modernization projects for VOA facilities worldwide. He was responsible for the expansion of the Liberian and Philippine HF relay stations, which involved building construction, installation of 250 kW transmitters and curtain arrays, and power plant expansion in Liberia. He held discussions with government representatives in Sri Lanka regarding expansion of the relay station in Colombo. He was responsible for the activities of a division composed of planning and development, project management, construction and installation, and engineering branches.

1976 to 1977: *Senior Scientist, Computer Sciences Inc., Falls Church, VA.* Mr. Bounds assisted the NAVELEX development manager for submarine communications. He prepared program plans for the development of towed buoy communication systems and expendable communication buoys.

1974 to 1976: *Senior Engineer, Semicor, Inc., Riverdale, MD.* Mr. Bounds provided technical and management support to the Navy's shipboard surveillance radar development programs.

1966 to 1974: *Engineering Section Head, ITT Electro Physics Laboratory, Columbia, MD.* Mr. Bounds was responsible for the management of HF radar and communications projects and for the supervision of antenna, transmitter, and receiver design sections.

1965 to 1966: *Senior Engineer, Honeywell Test Instruments Division, Annapolis, MD.* Mr. Bounds worked on a BUSHIPS contract in support of various communication systems.

1964 to 1965: *Senior Engineer, Antenna Research Associates, Beltsville, MD.* Mr. Bounds participated in the development of electrically small antennas in the HF and VHF ranges.

1960 to 1964: *Development Engineer, ACF Electro-Physics Laboratory, Bladensburg, MD.* Mr. Bounds participated in the design and development of HF antenna arrays, feed systems, and steering hardware.

Katherine Y. Ernhart
Engineer II

Summary:

Ms. Ernhart has 4 years of experience in the research and development, hardware/software implementation, and test and evaluation of electronic systems. She is proficient in all stages of microprocessor-based designs, from conception through board design and layout, to ROMable coding. In addition, Ms. Ernhart has been involved in the planning, design, development, and implementation of electrical, mechanical, and electromechanical diagnostic systems using an artificial intelligence, model-based expert system.

Education: Currently pursuing a master's degree in electrical engineering, with a specialization in computer engineering, from the Johns Hopkins University, Baltimore, MD. Degree expected in December 1992. Graduate courses include: Theory of Digital Systems, Computer Architecture, Microprocessor Systems, Parallel Processing Systems, Digital Design for Testability and Fault Tolerance, Data Communication Networks.

B.S., *Electrical Engineering*, Case Western Reserve University, Cleveland, OH, May 1989. Senior Project I: Design of a Fiber-Optic Switch/Distribution Network for an Optical Data Bus Tester (Sponsored by IBM). Senior Project II: Design and Implementation of a Small Force Sensor Based on Fabry-Perot Interference.

Languages: C, Pascal, Assembly, LISP, PADS, PALASM, ABEL, and PSpice.

Clearance: SECRET

Experience:

September 1991 to Present: *Systems Engineer*, SFA Inc., Landover, MD. Ms. Ernhart is primarily involved in the planning, design, development, and implementation of electrical, mechanical, and electromechanical diagnostic systems using an artificial intelligence, model-based expert system.

March 1991 to September 1991: *Systems Design Engineer*, Softaid, Inc. Ms. Ernhart developed the digital circuitry required to implement an 80386SX in circuit emulator (ICE) and assisted in the development of emulators for the 68000 microprocessor family. Ms. Ernhart also wrote a table-driven assembler/disassembler for the 80186/188 and 68000 microprocessor families for use in the ICE debugging environment. For the same debugger, Ms. Ernhart developed utilities in "C" to translate file structure information from various compiler's object file formats, including COFF (Common Object File Format). Ms. Ernhart also edited the user's manual for technical and grammatical accuracy. She supported clients throughout their development cycles.

June 1989 to February 1991: *Assistant Engineer*, IIT Research Institute/ECAC. Ms. Ernhart developed a dynamic scenario from tactical and strategic principles. She researched technical characteristics of both present and planned U.S. and NATO IFF identification systems for reasonability analysis. She developed a model, from conception through coding,

which calculates antenna coupling between two moving targets based on relative positions and platform dynamics. This effort included authoring the relevant portion of a user's manual, describing theory and application. She improved and verified a model which calculates azimuthal antenna pattern. Ms. Ernhart researched and developed a briefing on the evolution of IFF systems for presentation to a new sponsor and contractor employees.

May 1988 to August 1988: *Summer Pre-professional*, IBM Corporation, Systems Integration Division. Ms. Ernhart designed a fiber-optic switch/distribution network for an optical data bus tester, and prepared and presented a design review from which no action items or design changes resulted. She specified all required fiber-optic cable assemblies according to necessary military specifications. She documented theory of operation and test procedures. She also became familiar with the programming of PLD's.

January 1988 to May 1988: *Part-time Instructor*, Cleveland Institute of Electronics. Ms. Ernhart answered students' telephone and written queries on such subjects as differential equations, Fourier and Laplace transforms, digital and communications circuitry, and basic circuit theory.

June 1987 to January 1988: *Co-operative Education Position*, IBM Corporation, Federal Systems Division. Ms. Ernhart initiated design changes in logic boards for an RF transceiver tester after debugging and correcting manufacturing errors. She was in charge of all documentation using IBM's automated logic design system. She tested RF subassemblies and debugged an analog-to-digital logic board.

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AMERICAN CRYPTRONICS INC.



October 5, 1992

Mr. Roger D. Linquist
Chairman & CEO
PageMart, Inc.
6688 North Central Expy
Dallas, TX 75206

Dear Mr. Linquist:

This letter is intended to summarize the status of our development of a PCMCIA compatible paging receiver card and the subsequent development by American Cryptronics, Inc. (ACI) of a next generation transceiver, PCMCIA compatible card for use in a wide variety of notebook and palmtop computers including PDAs and pocket organizers. This development was initiated following our initial discussion with PageMart in the fourth quarter of 1991 and subsequently began in first quarter of 1992.

In the second quarter of 1992, we developed a working prototype of the 900 MHz PCMCIA paging receiver card which is currently in final design and testing. The card is intended to meet all the one-way communication needs of commercially available personal portable computers using a type II PCMCIA "slot."

We are currently in the process of prototyping a PCMCIA transceiver card that can be used with PageMart's PIMS system. The most important part of the PCMCIA transceiver card development will be accomplished with the receiver section. ACI foresees no technical feasibility issues with integrating a low power transmitter on the same card.

ACI is committed to being an important supplier of PCMCIA communications related peripherals to the portable personal computer industry and is currently working with computer manufacturers to commercialize this development. The follow-on steps of manufacturing a transceiver for the PIMS experimental testing is in progress and we believe there are many other application for the two-way PCMCIA card.

We at ACI look forward to a continued working relationship with PageMart for the development of future communication related computer peripherals.

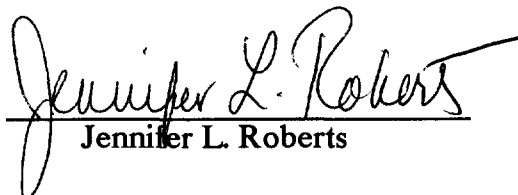
Sincerely,



Gary H. Kater
Executive Vice President

CERTIFICATE OF SERVICE

I, Jennifer L. Roberts, do hereby certify on this 5th day of October, 1992, that I have served a copy of the foregoing **PETITION FOR PARTIAL RECONSIDERATION** to all parties of General Docket No. 90-314 and ET Docket No.92-100 via first class mail, postage prepaid, or via hand delivery to the persons listed below.


Jennifer L. Roberts

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